

IN THE CLAIMS

Claim 1 (**currently amended**). Flame-retardant pressure-sensitive adhesive comprising

(a) at least one acrylate adhesive component,

(b) ~~at least one~~ a flame retardant component consisting ~~essentially~~ of ~~an~~ ammonium polyphosphate, and

(c) at least one tackifying resin component,

wherein said flame retardant component is the sole flame retardant component in the pressure-sensitive adhesive.

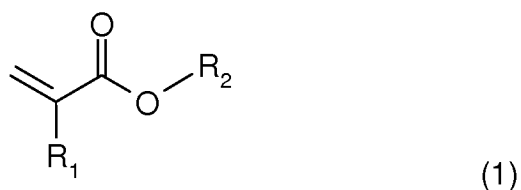
Claim 2 (original). Pressure-sensitive adhesive according to Claim 1, wherein said at least one acrylate adhesive component comprises at least 35% by weight of the adhesive.

Claim 3 (previously presented). Pressure-sensitive adhesive according to Claim 1, wherein said at least one flame retardant component comprises at least 25% by weight of the adhesive.

Claim 4 (previously presented). Pressure-sensitive adhesive according to Claim 1, wherein said at least one tackifying resin component comprises at least 25% of the adhesive.

Claim 5 (original). Pressure-sensitive adhesive according to Claim 1, wherein said at least one acrylate adhesive component has an average molecular weight M_w of not more than 600,000 g/mol.

Claim 6 (previously presented). Pressure-sensitive adhesive according to Claim 1, wherein said at least one acrylate adhesive component is based on at least one acrylate monomer of the formula (1)



where R_1 is H or a CH_3 radical and R_2 is H or is selected from the group consisting of saturated, branched and unbranched C_1 to C_{30} alkyl radicals.

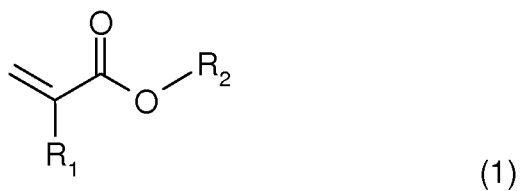
Claim 7 (previously presented). Pressure-sensitive adhesive according to Claim 6, wherein R_2 is other than H and has one or more substituents selected from the group consisting of carboxyl, sulphonic acid, hydroxyl, lactam, lactone, N-substituted amide, N-substituted amine, carbamate, epoxy, thiol, alkoxy, cyano, halide and ether radicals.

Claim 8 (previously presented). Pressure-sensitive adhesive according to Claim 6 or 7, wherein said C_1 to C_{30} alkyl radicals are C_4 to C_{14} alkyl radicals.

Claim 9 (previously presented). Pressure-sensitive adhesive according to Claim 8, wherein said alkyl radicals are cycloalkyl radicals having at least 6 carbon atoms.

Claim 10 (previously presented). Pressure-sensitive adhesive according to Claim 6 or 7, wherein said at least one acrylate monomer of formula (1) is selected from the group consisting of methyl acrylate, methyl methacrylate, ethyl acrylate, n-butyl acrylate, n-butyl methacrylate, n-pentyl acrylate, n-hexyl acrylate, n-heptyl acrylate, n-octyl acrylate, n-octyl methacrylate, n-nonyl acrylate, lauryl acrylate, stearyl acrylate, behenyl acrylate, isobutyl acrylate, 2-ethylhexyl acrylate, 2-ethylhexyl methacrylate, isooctyl acrylate, isooctyl methacrylate, cyclohexyl methacrylate, isobornyl acrylate, isobornyl methacrylate and 3,5-dimethyladamantyl acrylate.

Claim 11 (previously presented). Pressure-sensitive adhesive according to Claim 1, wherein said at least one acrylate adhesive component is based on at least one comonomer as well as on at least one acrylate monomer of the formula (1)



where R_1 is H or a CH_3 radical and R_2 is H or is selected from the group consisting of saturated, branched and unbranched C_1 to C_{30} alkyl radicals.

Claim 12 (previously presented). Pressure-sensitive adhesive according to Claim 11, wherein said at least one comonomer has one or more substituents selected from the group consisting of carboxyl, sulphonic acid, hydroxyl, lactam, lactone, N-substituted amide, N-substituted amine, carbamate, epoxy, thiol, alkoxy, cyano, halide and ether radicals.

Claim 13 (original). Pressure-sensitive adhesive according to Claim 11 or 12, wherein said at least one comonomer is a compound selected from the group consisting of N-alkyl-substituted amides.

Claim 14 (original). Pressure-sensitive adhesive according to Claim 11 or 12, wherein said at least one comonomer is a compound selected from the group consisting of hydroxyethyl acrylate, hydroxyethyl methacrylate, hydroxypropyl acrylate, hydroxypropyl methacrylate, allyl alcohol, maleic anhydride, itaconic anhydride, Itaconic acid, glyceridyl methacrylate, phenoxyethyl acrylate, phenoxyethyl methacrylate, 2-butoxyethyl acrylate, 2-butoxyethyl methacrylate, cyanoethyl acrylate, cyanoethyl methacrylate, glyceryl methacrylate, 6-hydroxyhexyl methacrylate, vinylacetic acid, tetrahydrofurfuryl acrylate, β -acryloyloxypropionic acid, trichloroacrylic acid, fumaric acid, crotonic acid, aconitic acid and dimethylacrylic acid.

Claim 15 (original). Pressure-sensitive adhesive according to Claim 11 or 12, wherein said at least one comonomer is a compound selected from the group consisting of vinyl esters, vinyl ethers, vinyl halides, vinylidene halides, vinyl compounds having aromatic rings or heterocycles in α -position.

Claim 16 (original). Pressure-sensitive adhesive according to Claim 11 or 12, wherein said at least one comonomer is a photoinitiator having a copolymerizable double bond.

Claim 17 (original). Pressure-sensitive adhesive according to Claim 11 or 12, wherein an aromatic vinyl compound having C₄ to C₁₈ aromatics or heteroaromatics is added to said at least one comonomer.

Claim 18 (previously presented). Pressure-sensitive adhesive according to Claim 1 wherein said at least one tackifying resin component is selected from the group consisting of pinene resins, indene resins and rosins or their salts; aliphatic, aromatic and alkylaromatic C₅ to C₉ hydrocarbon resins; hydrocarbon resins based on single monomers; hydrogenated hydrocarbon resins; hydrocarbon resins; natural resins; terpene resins and terpene-phenolic resins.

Claim 19 (original). A flame-retardant pressure-sensitive adhesive tape, comprising a carrier tape which is impregnated with a flame retardant and is coated on one or both sides with the pressure-sensitive adhesive of Claim 1.

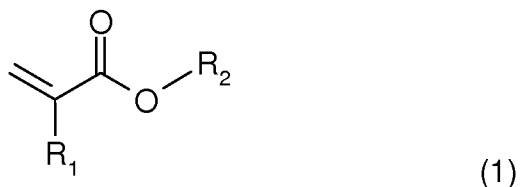
Claim 20 (original). Flame-retardant pressure-sensitive adhesive tape according to Claim 19, wherein the carrier tape used is a nonwoven PET web or a woven/nonwoven composite, or a woven fabric.

Claim 21 (original). Flame-retardant pressure-sensitive adhesive tape according to Claim 19 or 20, wherein the carrier tape is coated with the pressure-sensitive adhesive as a melt by a hotmelt process.

Claim 22 (original). Process for producing a flame-retardant pressure-sensitive adhesive of Claim 1, wherein

- (a) at least one acrylate adhesive component is prepared by at least partly polymerizing at least one acrylate monomer, optionally in the presence of at least one comonomer, and
- (b) successively or simultaneously at least one ammonium polyphosphate component and at least one resin component are combined with the at least one acrylate adhesive component.

Claim 23 (previously presented). Process according to Claim 22, wherein said at least one acrylate monomer is of the formula (1)



in which R₁ is H or an CH₃ radical and R₂ is H or is selected from the group consisting of saturated, branched and unbranched, C₁ to C₃₀ alkyl radicals.

Claim 24 (original). Process according to Claim 22 or 23, wherein the polymerization is conducted in solution or in bulk.

Claim 25 (original). Process according to any Claim 22 or 23, wherein the at least one ammonium polyphosphate component and the at least one resin component are compounded into a melt of the at least one acrylate adhesive component.

Claim 26 (original). Pressure-sensitive adhesive according to Claim 3, wherein said amount of said at least one ammonium polyphosphate component is from 30 to 40% by weight of the adhesive.

Claim 27 (original). Pressure-sensitive adhesive according to Claim 8, wherein R_2 is selected from the group consisting of C_4 to C_9 alkyl radicals

Claim 28 (original). Pressure sensitive adhesive according to Claim 13, wherein said at least one comonomer is selected from the group consisting of
N,N-dimethylacrylamide, N,N-dimethylmethacrylamide, N-tert-butylacrylamide,
N-vinylpyrrolidone, N-vinyl lactam, dimethylaminoethyl acrylate, dimethylaminoethyl methacrylate, diethylaminoethyl acrylate, diethylaminoethyl methacrylate,
N-methylolacrylamide, N-methylolmethacrylamide,
N-(butoxymethyl)methacrylamide, N-(ethoxymethyl)acrylamide and
N-isopropylacrylamide.

Claim 29 (original). Pressure sensitive adhesive according to Claim 15, wherein said vinyl compounds having aromatic rings or heterocycles in α -position are selected from the group consisting of vinyl acetate, vinyl formamide, vinylpyridine, ethyl vinyl ether, vinyl chloride, vinylidene chloride and acrylonitrile.

Claim 30 (original). Pressure sensitive adhesive according to Claim 16, wherein said comonomer is selected from the group consisting of Norrish I photoinitiators, Norrish II photoinitiators, benzoin acrylates and acrylated benzophenones.

Claim 31 (original). Flame-retardant pressure-sensitive adhesive tape according to Claim 21, wherein said hotmelt process is selected from the group consisting of roller coating, melt die processes and extrusion coating.

Claim 32 (original). Process according to Claim 25, wherein said components are compounded into a melt by an extrusion process.